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| 10/523,114 | 08/02/2005 | Francois-Xavier Jacques Berthet | B45314 | 4557 |

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GLAXOSMITHKLINE
GLOBAL PATENTS
FIVE MOORE DR., PO BOX 13398
MAIL STOP: C.2111F
RESEARCH TRIANGLE PARK, NC 27709-3398

| EXAMINER | |
|---|---|
| ARCHIE, NINA | |
| **ART UNIT** | **PAPER NUMBER** |
| 1645 | |

| NOTIFICATION DATE | DELIVERY MODE |
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| 10/06/2010 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USCIPRTP@GSK.COM
ELAINE.X.MARTENS@GSK.COM
PATRICIA.T.WILSON@GSK.COM

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/523,114 | BERTHET ET AL. | |
| | Examiner | Art Unit | |
| | Nina A. Archie | 1645 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *19 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-8,13-19,45-47 and 51-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,13-19,45-47 and 51-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/10/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 19, 2010 has been entered.

### *Amendment Entry*

2. The amendment filed May 19, 2010 has been entered. Claims 1-8, 13-19, 45-47, and 51-55 are pending and are currently under examination. Claims 9-12 and 20-44 are canceled.

### *Information Disclosure Statement*

3. The information disclosure statement filed on 9/10/10 have been considered. An initialed copy is enclosed.

### *Response to Arguments*

4. Applicant's arguments with respect to claims, 1-8, 13-19, 45-47, and 51-55 have been considered but are moot in view of the ground(s) of rejection.

### *Double Patenting Rejection Maintained*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the

conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. The rejection of claims 1-8, 13-19, 45-47, and 51-55 on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claims 3-4, 11, 17, 20, 22, 50-52, 54-61, 95-96, 98, 114-132 of copending Application No. 10/523,117 are maintained for the reasons set forth in the previous office action.

Examiner notes that Applicants state that this rejection should properly be a provisional one, as the co-pending application has not yet been deemed in condition for allowance. Examiner notes that Applicants will address the rejection at such time as the claims of Application No. 10/523,117 are deemed allowable and the rejection of the present application becomes non-provisional.

As outlined previously, claims 1-8, 13-19, 45-47, and 51-55 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 3-4, 11, 17, 20, 22, 50-52, 54-61, 95-96, 98, 114-132 of copending Application No. 10/523,117.

Claims 3-4, 11, 17, 20, 22, 50-52, 54-61, 95-96, 98, 114-132 of U.S. Application No. 10/523,117 teach to an immunogenic composition comprising an isolated transferring binding protein (Tbp) or antigenic fragment thereof and an isolated Hsf like protein or antigenic fragment thereof from the same or different Gram negative bacteria.

Although the conflicting claims are not identical, they are not patentably distinct. The U.S. Application No. 10/523,117 recites the "immunogenic composition". The species of the immunogenic composition anticipate the genus claims of any immunogenic composition.

Thus, claims 1-8, 13-19, 45-47, 51-53, and 55 encompassing the immunogenic composition in the present application are obvious over claims 3-4, 11, 17, 20, 22, 50-52, 54-61, 95-96, 98, 114-132 of Application No. 10/523117.

***Claim Rejections Maintained - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The rejection of claims 1-8, 13-19, 45-47, and 51-55 under 35 U.S.C. 102(b) as being by Berthet et al WO/2001/009350 February 8, 2001 are maintained for the reasons set forth in the previous office action.

Applicants arguments filed in response to the 35 U.S.C. 102(b), May 19, 2010 is carefully considered, but not found to be persuasive for the reasons below.

**Applicant arguments**:

A) Applicants argue Berthet et al. teach a bleb preparation having one or more upregulated genes selected from a list of 21 antigens, including Hsf-like and TbpA and Tbp, thus, the reference teaches a genus of many possible antigen combinations, including 210 distinct combinations of two different antigens but does not list the particular combination of an Hsf-like antigen and a TbpA or TbpB antigen. Applicants argue the reference does not teach all the limitations recited in claim 1 or dependent claims 2-8, 13-19, 45-47, and 51-55.

**Examiner's Response to Applicant's Arguments:**

With regard to Point (A), the claims recite open claim language (i.e. comprising) and are directed to a transferring binding protein (Tbp) or antigenic fragment thereof and an isolated Hsf like protein or antigenic fragment thereof in an immunogenic composition. Therefore the claims are not specifically limited to the particular pair/combination of an Hsf-like antigen and a TbpA or TbpB antigen. Berthet et al teach an immunogenic composition comprising a Tbp antigenic fragment thereof and an Hsf like antigenic fragment. Applicants appear to believe that the instant claims drawn to a transferring binding protein (Tbp) or antigenic fragment thereof and an isolated Hsf like protein or antigenic fragment thereof in an immunogenic composition are a narrow species, however the instant claims are in fact a larger genus than Berthet et al. Moreover, a reference that clearly names the claimed species (i.e. Hsf-like) anticipates the claim no matter how many other species are additionally named. Ex parte A, 17 USPQ2d 1716 (Bd.

Pat. App. & Inter.1990) (The claimed compound was named in a reference which also disclosed 45 other compounds. Therefore the rejection is maintained.

As outlined previously, the claims are drawn to an immunogenic composition comprising an isolated transferring binding protein (Tbp) or antigenic fragment thereof and an isolated Hsf like protein or antigenic fragment thereof from the same or different Gram negative bacteria (claim 1), wherein the transferrin binding protein or fragment thereof and Hsf like protein or fragment thereof are from *Neisseria* (claim 2), wherein the transferrin binding protein or fragment thereof is derived from *N. meningitidis* (claim 3), wherein the Hsf like protein or fragment thereof is derived from *N. meningitidis* (claim 4), wherein the transferrin binding protein or fragment thereof is derived from *N. meningitidis* serogroup B (claim 5), wherein the Hsf like protein or fragment thereof is derived from *N. meningitidis* serogroup B (claim 6), wherein the transferrin binding protein or fragment thereof is derived from *N. gonorrhoeae* (claim 7), wherein the Hsf like protein or antigenic fragment thereof is derived from N. gonorrhoeae (claim 8), wherein the transferrin binding protein is TbpA or an antigenic fragment thereof (claim 13), comprising high molecular weight form TbpA or low molecular weight form TbpA or both high molecular weight form TbpA and low molecular weight form TbpA (claim 14), wherein the Hsf like protein is Hsf or an antigenic fragment thereof (claim 15), comprising antigenic fragments of Tbp and/or Hsf like protein capable of generating a protective response against Neisserial infection (claim 16), comprising antigenic fragments of TbpA and/or Hsf (claim 17), comprising a fusion protein of Tbp and Hsf like protein or antigenic fragments thereof (claim 18), comprising a fusion protein comprising TbpA and Hsf or antigenic fragments thereof capable of generating a protective response against Neisserial infection (claim 19), further comprising plain or conjugated bacterial capsular polysaccharide or oligosaccharide (claim 45), comprising two or more bacterial capsular polysaccharides or oligosaccharides conjugated to transferrin binding protein or Hsf like proteins or both (claim 46), wherein the capsular polysaccharide or oligosaccharide is derived from one or more bacteria selected from the group consisting of *Neisseria meningitidis serogroup A, Neisseria meningitidis serogroup C, Neisseria meningitidis serogroup Y, Neisseria meningitidis serogroup W-135, Haemophilus influenzae b, Streptococcus pneumoniae, Group A Streptococci, Group B Streptococci, Staphylococcus aureus and Staphylococcus" epidermidis* (claim 47), comprising an adjuvant

(claim 51), comprising aluminum salts (claim 52), comprising 3D-MPL (claim 53), comprising an adjuvant containing CpG (claim 54); a vaccine comprising the immunogenic composition of claim 1 and a pharmaceutically acceptable excipient (claim 55).

Berthet et al teach a bleb vaccine comprising a genetically-engineered bleb preparation isolated from a modified *Nesseria* strain wherein one ore more genes are upregulated such as Hsf-like, TbpA, and TbpB antigens (see claims 1-2, 13-14) wherein the Gram-negative bacterial strain such as *N. meningitidis B* strain is characterized in that said preparation is obtainable by employing one or more processes such as a process of upregulating expression of protective OMP antigens within the bleb preparation comprising the steps of identifying such antigen, engineering a bacterial strain so as to introduce a stronger promoter sequence upstream of a gene encoding said antigen such that said gene is expressed at a level higher than in the non-modified bleb, and making blebs from said strain or a process of upregulating expression of protective OMP antigens within the bleb preparation comprising the steps of identifying such antigen, engineering a bacterial strain so as to introduce into the chromosome one or more further copies of a gene encoding said antigen controlled by a heterologous, stronger promoter sequence, and making blebs from said strain (see claims 1 and 2) which correlate to an immunogenic composition an immunogenic composition comprising an isolated transferring binding protein (Tbp) or antigenic fragment thereof and an isolated Hsf like protein or antigenic fragment thereof from the same or different Gram negative bacteria. Therefore Berthet et al teaches a an immunogenic composition comprising antigens Hsf-like and TbpA and TbpB.

Berthet et al teach bleb components produced conditionally and the expression of some genes coding for certain bleb components is carefully regulated. Berthet et al teach Neisserial bleb preparations one or more of the following genes (encoding protective antigens) are preferred for upregulation when carried out on a Neisserial strain, including gonococcus, and meningococcus (particularly N. meningitidis B), Hsf-like, TbpA, TbpB (see pg. 26 lines 1-20, pg. 27 lines 25-30, pg. 28 lines 1-15, pg. 31 lines 1-15). Berthet et al teach a genetically-engineered bleb preparation from a Gram-negative bacterial strain wherein the Gram-negative strain is Neisseria gonorrhoeae (see pg. 31 lines 1-15). Berthet et al teach the bleb preparation in the manufacture of a medicament for immunizing a human host against a disease caused by infection of one or more of the following: *Neisseria meningitidis, Neisseria gonorrhoeae.*

Berthet et al teach a meningitis vaccine comprising the bleb preparation of one or more plain or conjugated pneumococcal capsular polysaccharides and a meningococcal vaccine comprising the bleb preparation of one or more plain or conjugated meningococcal capsular polysaccharides selected from the serotypes A, C, Y or W (see pg 36). Berthet et al teach bleb preparations of the present invention may be adjuvant in the vaccine formulation of the invention such as aluminum salt such as aluminum hydroxide gel (alum) or aluminum phosphate, and 3-de-O-acylated monophosphoryl lipid A (3D- MPL) together with an aluminum salt (see pgs. 33-34). Berthet et al teach that unmethylated CpG containing oligo nucleotides are suitable for use in the present invention (see claims see pgs. 33-34).

Although Berthet et al teach methods to effectuate changes in the antigen expression in blebs the claims encompass an immunogenic composition comprising a Tbp antigenic fragment thereof and an Hsf like antigenic fragment thereof thus Berthet et al meet the limitations to the claims.

### *New Grounds of Claim Objections*

7. Claim 1-8 are objected to because of the following informalities: As to claims 1-8, the claims contain the abbreviations (i.e. N. meningitidis or N. gonorrhoeae). While acronyms are permissible shorthand in the claims, the first recitation should include the full recitation followed by the acronym in parenthesis for ex. Lawsonia intracellularis (L. intracellularis). Appropriate correction is required.

### *Conclusions*

8. No claims are allowed.

All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nina A. Archie whose telephone number is 571-272-9938. The examiner can normally be reached on Monday-Friday 8:30-5:00p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Larry Helms can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nina A Archie
Examiner
GAU 1645
REM 3B31

/Robert A. Zeman/
for Nina Archie, Examiner of Art Unit 1645